U.S. Department of the Interior
Bureau of Land Management

Environmental Assessment
DOI-BLM-NV-S010-2014-0002-EA
January 2015

Clark County Public Works
Summerlin South Detention Basin

APPLICANT

Clark County Public Works

GENERAL LOCATION

The proposed action is located in
T. 22 S., R. 59 E., M.D.M. Section 1

BLM CASE FILE SERIAL NUMBER(S)

N-92317

PREPARING OFFICE

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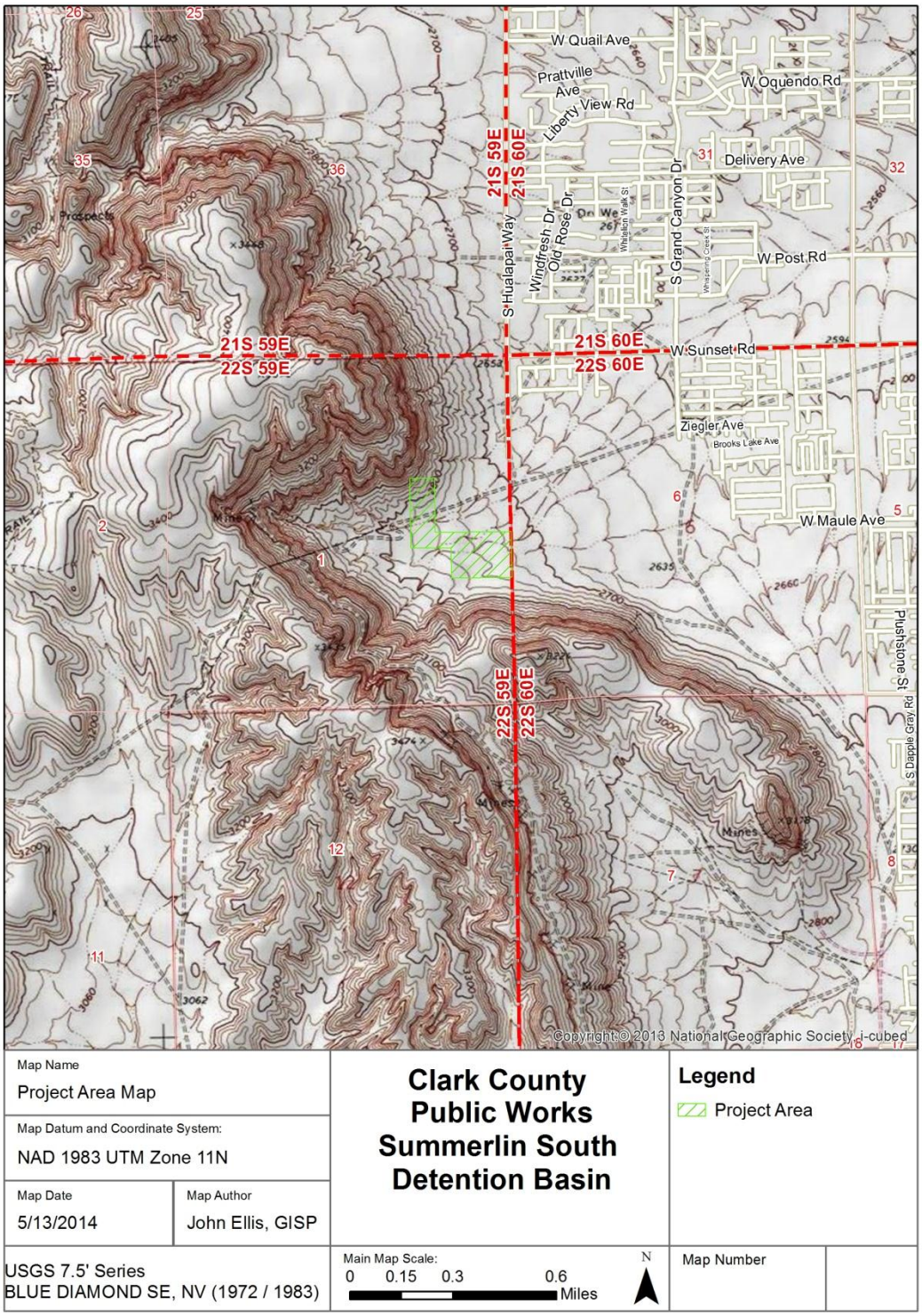
1.0. INTRODUCTION

Clark County Public Works, located in Las Vegas, Nevada, has filed an application with the Bureau of Land Management (BLM) Las Vegas Field Office (LVFO) for the construction, operation, and maintenance of a detention basin to be located near Hualapai Way and Maule Avenue in Clark County, Nevada.

The proposed development consists of construction of a flood control facility, including a detention basin and channels, upstream of proposed development, on land administered by the BLM. The proposed facility will be used in perpetuity, providing year round flood protection. The facility will be continuously maintained to obtain the maximum benefits and ensure safe, continued operation.

The BLM has identified the LVFO as the lead federal agency for the proposed project and has determined that an Environmental Assessment (EA) will be prepared in compliance with the National Environmental Policy Act of 1969 (NEPA). The legal description of the project area is Section 1, Lots 11, 13, 14, 23, 24, and 25 within Township 22 South, Range 59 East, M.D.M. Figure 1.0-1 shows the project area and location.

Figure 1.0-1. Project Location and Area.



Map Name: Project Area Map	**Clark County Public Works Summerlin South Detention Basin**	**Legend**: Project Area
Map Datum and Coordinate System: NAD 1983 UTM Zone 11N		
Map Date: 5/13/2014 / Map Author: John Ellis, GISP		
USGS 7.5' Series BLUE DIAMOND SE, NV (1972 / 1983)	Main Map Scale: 0 0.15 0.3 0.6 Miles; N	Map Number

1.1. Purpose and Need for Proposed Action

1.1.1. Purpose and Need for Flood Control Detention Basin

Purpose Statement: The purpose of the project is to construct a flood control detention basin and channels to provide year round flood protection to downstream property and facilities

Need Statement: By temporarily storing rainwater runoff and reducing peak discharge by allowing flow to be discharged at a controlled rate from the detention basin, property and facilities downstream of the basin will be protected. The facility will also reduce debris sediment in the flood control system, ultimately improving water quality in local washes and surface waters.

Decision to be Made: The Bureau of Land Management (BLM) under the authority of the Federal Land Policy and Management Act (FLPMA) of October 21, 1976, as amended (43 U.S.C. 1761 et.seq.) and in accordance with the regulations found at 43 CFR 2800, will decide whether or not to grant the right-of-way (ROW) on BLM administered surface for construction of the flood control detention basin and if so, under what terms and conditions.

1.2. Relationship to Statutes, Regulations, Plans or Other Environmental Analyses

1.2.1. Conformance with Land Use Plan

Las Vegas Resource Management Plan: The Las Vegas Resource Management Plan (LVRMP) (October, 1998) provides management direction for resources contained within the LVFO area. The project is in conformance with LVRMP direction pertaining to construction and operation of flood control detention basins, subject to compliance with project-specific mitigation and monitoring requirements determined through the environmental analysis process. The environmental analysis completed for this project will incorporate appropriate decisions, terms, and conditions of use described in the RMP decisions.

Use authorizations (i.e., ROW, permits, etc.) for roads, the detention basin, and associated facilities would be processed through the BLM rights-of-way permitting process.

1.2.2. Local Land Use Plans

The Proposed Action would comply with all relevant federal, state, and local laws, and the Clark County Master Plan Update (2007).

1.2.3. Authorizing Actions

The project is located in unincorporated Clark County, Nevada. All facets of the project shall comply with the Municipal Code of Clark County. In addition, the construction of this facility will require review and approval of the Nevada State Dam Safety Division. The proposed federal, county and local actions required to implement the Regional Flood Control Facility Project are listed in Table 1.2-3.

Table 1.2-3. Major Authorizations, Permits, and Approvals.

Action Requiring Permit, Approval, or Review	Responsible Agency	Permit or Approval	Statutory Reference
Federal			
Flood control detention basin construction and operation on land under federal management	Bureau of Land Management (BLM)	ROW Grant	Federal Land Policy Management Act of 1976 (FLPMA); Public Law (PL) 94-579
	BLM	Finding of No Significant Impact or Record of Decision	National Environmental Policy Act (NEPA); Council on Environmental Quality; 40 Code of Federal Regulation (CFR)Part 1500 et seq.
	U.S. Army Corps of Engineers	Letter of Permission	Clean Water Act Section 404 (b) (1) 33 CFR 325.2(e)(1)(ii)
	U.S. Fish and Wildlife Service (FWS)	May Affect, Likely to Adversely Affect Determination	Endangered Species Act (ESA) Section 7 Section 7 consultation covered under the Programmatic Biological Opinion (84320-2010-F-0365.R001)
Local			
Dust control permit for construction within the PM10 non-attainment boundary	Clark County	Dept. of Air Quality and Environmental Management	

1.3. Scoping, Public Involvement, and Issues

The requested right-of-way (ROW) for the project is located partially within and also immediately adjacent to the disposal boundary identified in the Southern Nevada Public Lands Management Act (SNPLMA). Resource impacts and environmental concerns were previously evaluated in the 2004 Environmental Impact Statement (EIS) for the Las Vegas Valley.

Internal scoping was conducted by an interdisciplinary (ID) team at the BLM LVFO that analyzed the potential consequences of the proposed action. Potential impacts to the following resources/concerns were evaluated in accordance with criteria listed above to determine if detailed analysis was required. Consideration of some of these items is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Southern Nevada District BLM in particular. The draft EA for this project was made available for public comment on July 2014 by publication in the BLM Land Use Planning and NEPA Register. No comments were received.

Table 1.3-1. presents a list of resources and specifies if these elements are present in the proposed project area, and if they are present if they potentially would be affected by the proposed project or not affected by the proposed project and the rationale for that conclusion.

Table 1.3-1. Resources Concerns for Summerlin Detention Basin.

Resource	Not Present	Present/Not Affected	Present/Maybe Affected	Rationale
Air Resources		X		Discussed in Section 3.1.
Areas of Critical Environmental Concern	X			The proposed project area is not within an ACEC or any critical desert tortoise habitat. No additional discussion needed.
BLM Natural Areas	X			There are no such designations within the Field office. No additional discussion needed.
Cultural Resources	X			A field inspection on 2/7/2014 of the undertaking which revealed that there are not any historic properties present; no further Section 106 review required. If any archaeological remains are encountered during construction, the BLM Archaeologist should be notified prior to work resuming within 15 meters of any find. No additional discussion needed.
Green house Gas Emissions		X		Discussed in Section 3.1.
Environmental Justice	X			No minority or low-income communities are present in project area. No additional discussion needed.
Farmlands (Prime or Unique)	X			There are no prime or unique farmland designations in the District. No additional discussion needed.
Fish and Wildlife		X		Discussed in Section 3.2.
Floodplains		X		Discussed in Section 3.3.
Fuels/Fire Management		X		Discussed in Section 3.4.
Geology/ Mineral Resources/ Energy Production		X		Discussed in Section 3.5.
Hydrologic Conditions		X		Discussed in Section 3.6.
Invasive Species/ Noxious Weeds		X		Discussed in Section 3.7.

Lands/Access		X		Discussed in Section 3.8.
Livestock Grazing	X			The proposed action area is not located in any authorized grazing allotments. No additional discussion needed.
Migratory Birds			X	Discussed in Section 3.9.
Native American Religious Concerns	X			There are not any Native American concerns/issues that have been previously identified that would be associated with the project area. No additional discussion needed.
Paleontology	X			A review of the literature and relevant maps revealed that there are not any paleontological resources that would be affected by the action. If such remains are encountered, the BLM Archaeologist should be notified prior to work resuming within 15 meter of the find. No additional discussion needed.
Rangeland Health Standards		X		Discussed in Section 3.6.
Recreation		X		Minimal recreation is present in this location and would not be affected. Discussed in Section 3.10.
Socio-Economics		X		This project will not disproportionately impact social or economic values. Discussed in Section 3.11.
Soils		X		No new issues as this project is located in the valley disposal boundary and the general area is already disturbed. Discussed in Section 3.12.
Threatened, Endangered or Candidate Plant Species	X			No additional discussion needed.
Threatened, Endangered or Candidate Animal Species			X	Discussed in Section 3.13.
Wastes (hazardous or solid)	X			The standard stipulations can be found in grant document.
Water Resources/Quality (drinking/surface/ground)		X		No new issues as this project is located in the valley disposal boundary and the general hydrology is already disturbed. Discussed in 3.14.
Wetlands/Riparian Zones	X			No permanent surface waters or wetlands exist in or near the project area. No additional discussion needed.
Wild and Scenic Rivers	X			No additional discussion needed.
Wilderness/WSA	X			Not within designated Wilderness or WSAs/ISAs. No additional discussion needed.
Woodland/ Forestry		X		Discussed in Section 3.15.
Vegetation Excluding Federally Listed Species	X			Discussed in Section 3.16.
Visual Resources		X		Discussed in Section 3.17.

Wild Horses and Burros	X			The proposed detention basin is not located in an active herd management area; there will be no impacts to wild horses or burros. No additional discussion needed.
Lands with Wilderness Characteristics	X			No additional discussion needed.

2.0. DESCRIPTION OF PROPOSED ACTIONS AND ALTERNATIVES

2.1. Description of the Proposed Actions

The Clark County Public Works Detention Basin is designed to temporarily store rainwater runoff in the detention basin to allow release at a controlled rate by reducing the outfall discharge rate from 900 cubic feet per second (cfs) to 125 cfs. The proposed detention basin and channel facilities were identified in the May 2013 Conceptual Drainage Study for the Amendment to the 2008 Las Vegas Valley Master Plan Update (MPU) and identified as Facilities I.D. #'s FLF3 0185, 0198, 0184, and 0134.

The flood control detention basin and channels would be constructed to protect downstream property and facilities. The detention basin would not only temporarily store rainwater runoff and reduce peak discharge by allowing flow to be discharged at a controlled rate; the facility would also reduce debris sediment in the flood control system, leading to an improvement in water quality in local washes and surface waters.

The proponent has tested soils at the site of the titled detention basin prior to construction. The purpose was to collect soil properties data to aid in the design and future construction of the basin. The applicant bore tested at six locations within the planned basin site under a categorical exclusion (DOI-BLM-NV-S010-2014-0097-CX). There were no encumbrances of record affecting the planned locations. Bore site locations are shown on the drawing below in Figure 2.1-1. There were five borings 20 feet in depth and one boring 25 feet deep. All borings were 8 inches in diameter.
This Flood Control Facility would consist of a 10 acre detention basin with a depth of approximately 14 feet, 500 linear feet of spillway, 1,500 linear feet of 100 foot wide collection channels and 250 linear feet of 66 inch outfall pipeline. The 100-year computed peak storm water inflow to the basin is approximately 900 cfs reduced to 125 cfs in the outlet pipe. Total design sediment storage volume is 4.2 ac-ft. Table 2.1-1. below outlines pertinent data for the detention basin, inlet channel and outlet pipe.

The detention basin will consist of an earthen dam embankment, excavation and grading within the basin. The embankment will be constructed from materials excavated for the basin. The outlet system will consist of a 66 inch reinforced concrete pipe. The inlet channel will be constructed as a riprap lined, open channel. No fencing will be installed around the basin or inlet channel. A disposal site will be located on the southwest portion of the ROW or other approved site for maintenance and cleanout of the detention basins. Maintenance roads will be constructed with gravel excavated from the channel to connect

the project to the existing ROW. Off-site access to the proposed basin would be via existing BLM road right-of-way grant N-60726, granted in perpetuity to Clark County on 6-27-1996 as South Hualapai Way and Maule Avenue. A total of 25.4acres of land is needed for the Proposed Action, of which 0.8 acres is existing disturbance. Of the 25.4 acres, 9.2 acres will consist of the detention basin and 4.1 acres will be used for roads, fencing and related permanent facilities. The facility would be designed in accordance with the *Hydrologic Criteria and Drainage Design Manual* (HCDDM) and Nevada Division of Water Resources Dam Safety Division Criteria

Figure 2.1-1. Bore site locations.

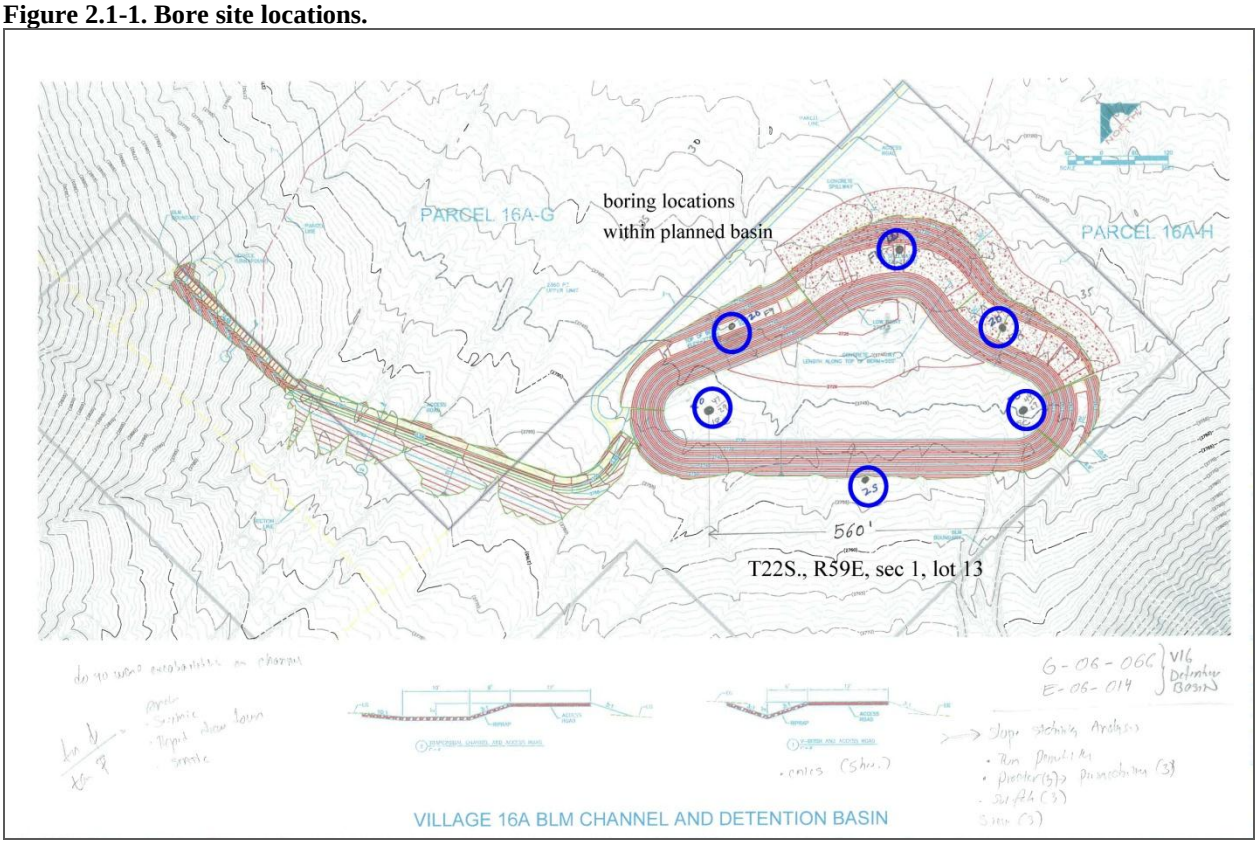


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Table 2.1.1

Channel Information	
Length of Channel	1,500 feet
Channel Width	10 to 40 feet
Height of Channel	3 to 10 feet
Design Discharge	900 to 125 cfs
Design Velocity	10fps (max calculated)
Debris Basin Information	
Drainage Area	0.59 so mi
Embankment	
Top of Reservoir Elevation	2,749 feet
Embankment Length	1,000 feet
Top of Embankment Width	15 feet
Max. Height Above Downstream Fill	18 feet
Freeboard Above Max. Water Surface (PMF)	1 foot (min)
Spillway	
Crest Elevation	2,746 feet
Crest Length	500 feet
Design Discharge (100 year)	125 cfs
Design Discharge (PMF)	9,000 cfs
Outlet Works	
Size of Conduit	66 inch RCP
Length of Conduit	250 feet
Intake Elevation	2,729 feet
Reservoir	
Area at Spillway Crest	3.6 acres
Reservoir Capacity at Spillway Crest Elevation	
Storage Allocation Below Spillway Crest	
Sediment Storage	4.2 ac-ft

2.1.1. Construction Activities

During the soil borings (DOI-BLM-NV-S010-2014-0097-CX), a ten-wheel rubber tire truck-mounted drill rig and one pickup truck were used utilizing a three person crew. A biologist accompanied the crew to monitor for desert tortoise and other sensitive flora and fauna. Access to the planned basin is via an existing road from the intersection of Hualapai Avenue and Maule Avenue. Overland drive and crush disturbance occurred during the boring activities, while avoiding sensitive flora and fauna.

Drill cuttings were used to backfill the borings and excess material was scattered in place. The excess material was estimated to be less than one cubic foot per boring. Reclamation consisted of contouring excess material to approximate existing terrain. The drilling took one day on BLM land, and soil testing was performed off-site.

Construction of the detention basin project is expected to begin upon issuance of the lease by BLM, and is expected to take approximately 365 days to complete. The construction sequence of events is as follows:

- Staking of ROW limits and placement of grade stakes.
- The area is cleared, grubbed, over-excavated, re-compacted and rough graded to specific densities.
- Excavation of detention basin, inlet channel and outfall pipe location. Installation of riprap in inlet channel and detention basin is installed.
- Outfall pipe is installed and backfilled.
- Final grading of the site is completed with a gravel access to the inlet channel and detention basin.
- Plant material and soils removed from undisturbed ROW is disbursed in accordance with federal reclamation requirements.

The work force is anticipated to include survey crews, construction crews, inspectors, laborers and equipment operators. Equipment to be used during these construction activities includes backhoes, cranes, a mechanical compactor, water trucks and material delivery trucks.

Equipment to be used during operation and maintenance includes backhoes, vactor trucks, and other specialty equipment. The equipment would be necessary for periodic inspections, removal of sediment and debris, repair of eroded areas and the repair of damages to structures.

2.2. Description of the No Action Alternative

Under the No Action Alternative, the flood control facility would not be built and the outfall discharge rate would continue to be 900 cubic feet per second (cfs) and there would be no protection for facilities and structures downstream.

2.3. Alternatives Considered and Dropped

During the initial planning stages, there were other locations proposed for the detention basin within Section 1 of Township 22 South, Range 59 East, but the topography and hydrology led to the preferred location. Both larger and smaller project footprints were also considered, but the proposed location was deemed best to capture predicted storm events and protect the surrounding properties.

3.0. AFFECTED ENVIRONMENT

3.1. Air Quality and Greenhouse Gas Emissions

3.1.1. Proposed Action

The National Ambient Air Quality Standards (NAAQS) are health-based standards which define the maximum concentration of air pollutants allowed at all locations to which the public has access. Environmental Protection Agency (EPA) criteria air pollutants for which standards exist are carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter less than 10 microns in effective diameter (PM_{10}), particulate matter less than 2.5 microns in effective diameter ($PM_{2.5}$), and sulfur dioxide (SO_2). Table 3.1-1. shows the state and federal ambient standards for criteria air pollutants.

Table 3.1-1. State and Federal Ambient Standards for Criteria Air Pollutants

Pollutant	Averaging Period	Federal Primary Standard	Nevada State Standard
Ozone	8-hour	0.075 ppm	Same as Federal
	1-hour (daily max.)	0.12 ppm	Same as Federal
$PM_{2.5}$	Annual (arithmetic mean)	15.0 µg/m^3	Same as Federal
	24-hour	35 µg/m^3	Same as Federal
PM_{10}	Annual (arithmetic mean)	NA	Same as Federal
	24-hour	150 µg/m^3	Same as Federal
Carbon Monoxide	8-hour (less that 5,000' above mean sea level (MSL)	9 ppm	Same as Federal
	8-hour (greater than 5,000' above mean sea level (MSL)	9 ppm	6 ppm
	1-hour	35 ppm	Same as Federal
Nitrogen Dioxide	Annual (arithmetic mean)	0.053 ppm	Same as Federal
	1-hour	0.100 ppm	Same as Federal
Sulfur Dioxide	Annual (arithmetic mean)	0.03 ppm	Same as Federal
	24-hour	0.14 ppm	Same as Federal
	3-hour	NA	0.50 ppm
Lead	Rolling 3-month average	0.15 µg/m^3	Same as Federal
	Quarterly average	1.5 µg/m^3	Same as Federal

Sources: USEPA, 2011; NDEP, 2010.
ppm = parts per million
µg/m^3 = micrograms per cubic meter

Air quality monitoring for O_3, CO, SO_2, NO_2, $PM_{2.5}$/PM_{10}, and Pb is conducted by Clark County Department of Air Quality and Environmental Management (DAQEM) within the Greater Las Vegas Metropolitan Area, Nevada. Clark County previously had been designated non-attainment for CO, PM_{10}, and O_3. However, Clark County was redesignated to attainment for carbon monoxide in 2010 (Federal Register Vol. 75, No. 145, July 29, 2010). Clark County was also redesignated to attainment for PM_{10} in 2010

(Federal Register Vol. 75, No. 148, August 3, 2010), and was redesignated to attainment for O_3 in 2011 (Federal Register Vol. 76, No. 60, March 29, 2011).

Currently, Clark County meets the O_3, $PM_{2.5}$, CO and NO_2 NAAQS and is unclassifiable for SO_2 and Pb. The county is a Maintenance Area for O_3 and CO. The Las Vegas Valley (Hydrographic Area 212) within Clark County is classified as a serious non-attainment area for PM_{10}. The area cannot be formally designated as an attainment area until the EPA approves the *Request for Redesignation and Maintenance of PM_{10}*, submitted by DAQEM in August 2012 and EPA action on this request is still pending.

There are 14 air quality monitoring stations within the Las Vegas Valley and one in Boulder City. The closest monitoring station near the proposed project area is Paul Meyer located at Tropicana Avenue and Rainbow Boulevard. The station is located approximately 7,500 meters northeast of the proposed project area and monitors PM_{10} and O_3. Two other stations within the Las Vegas Valley that measure NO_2, CO, and $PM_{2.5}$ are JD Smith and Jerome Mack. Jerome Mack also measures SO_2 whereas JD Smith does not.

The monitored concentrations described in Table 3.1-1. are considered ambient air background concentration standards. These concentrations are assumed to include emissions from industrial sources in operation and from mobile, urban, biogenic, and other non-industrial emissions sources. These concentrations can be compared to the annual concentrations measured within the Las Vegas Valley outlined in Table 3.1-2.

Table 3.1-2. Monitored Air Pollutant Background Concentrations in Las Vegas Valley 2013.

Pollutant	Monitoring Site	Measured Background Concentration (yearly average)
CO	Las Vegas JD Smith Site 2013	0.514 ppm
NO_2	Las Vegas JD Smith Site 2013	13.6 ppb
O_3	Las Vegas Paul Meyer Site 2013	34 ppb
PM_{10}	Las Vegas Paul Meyer Site 2013	19.14 ug/cu
$PM_{2.5}$	Las Vegas JD Smith Site 2013	9.53 ug/cu
SO_2	Las Vegas Jerome Mack 2013	1.6 ppb
Sources: Clark County DAQEM 2014 ppm = parts per million ppb=parts per billion µg/cu = micrograms per cubic foot		

The Clark County DAQEM, through authority given by the Nevada Department of Environmental Protection (NDEP) in its EPA-approved State Implementation Plan, is the primary air quality regulatory agency responsible for determining potential impacts once detailed industrial development plans have been made, and those development plans are subject to applicable air quality laws, regulations, standards, control measures, and management practices. Therefore, the Clark County DAQEM has the ultimate responsibility for reviewing and permitting the project prior to its operation. Unlike the conceptual 'reasonable, but conservative' engineering designs used in NEPA analyses, any air quality preconstruction permitting demonstrations required would be based on site-specific, detailed engineering values which would be assessed in the permit application review. Any facility developed under the Proposed Action which meets the requirements set forth under Clark County air quality regulations would be subject to DAQEM permitting and compliance processes, including requirements for fugitive dust sources set forth in Sections 41 and 94 of the Clark County Air Quality Regulations.

In 1977, Congress amended the Clean Air Act establishing a national goal to protect visibility in Class I federal areas such as national parks, forests and wilderness areas. The amendments called for the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I federal areas which impairment results from manmade air pollution." In Nevada, there is one designated Class I area, the Jarbidge Wilderness Area in the northeast corner of the state. The U.S. Environmental Protection Agency announced a major effort to improve air quality in national parks and wilderness areas in 1999. The Regional Haze Rule calls for state and federal agencies to work together to improve visibility in 156 national parks and wilderness areas.

Visibility conditions can be measured as standard visual range (SVR). SVR is the farthest distance at which an observer can just see a black object viewed against the horizon sky; the larger the SVR, the cleaner the air. Continuous visibility-related optical background data, representative of the project area, have been collected at Meadview Arizona as part of the Interagency Monitoring of Protected Visual Environments (IMPROVE) program. Monitoring data from Meadview indicates that visibility conditions for the region are good, with a mean SVR from 152-215 km during the best, middle and worst visibility days (IMPROVE 2013).

Currently there are no emission limits for suspected Greenhous Gas (GHG) emissions, and no technically defensible methodology for predicting potential climate changes from GHG emissions. However, there are, and will continue to be, several efforts to address GHG emissions from federal activities, including the proposed project.

3.1.2. No Action Alternative

Under this Alternative there would be no impacts.

3.2. Fish and Wildlife

3.2.1. Proposed Action

General wildlife species within the Proposed Action includes small mammals, rodents, birds, and reptiles. According to data from Nevada Department of Wildlife (NDOW), there are no known big game (e.g. mule deer, bighorn sheep) distributions within a 4 mile buffer of the Proposed Action (NDOW 2014). The Proposed Action is also habitat for BLM sensitive species such as the western burrowing owl, chuckwalla, banded Gila monster, Mojave shovel nosed snake, desert glossy snake, and Mojave desert sidewinder. The Proposed Action also contains habitat for Migratory Birds and raptors, see Chapter 3.9 for a discussion on these species. NDOW also identified 50 other wildlife species observed near the project area (Appendix A). General wildlife and BLM Sensitive species may be impacted by the Proposed Action.

3.2.2. No Action Alternative

Under this Alternative there would be no impacts.

3.3. Floodplains

3.3.1. Proposed Action

The Proposed Action does not contain any surface waters and there are no navigable waters within 10 miles of the project area. Some half dozen wash channels run down the slopes and through the lower portions of the project site. Based on the Clark County Regional Flood Control District (CCRFCD) Flood Zone maps for the area, the Proposed Action is located outside the Federal Emergency Management Agency (FEMA) designated floodplain. The Proposed Action is also located within the Las Vegas Valley Disposal Boundary and the CCRFCD is responsible for flood control. The Proposed Action will serve as flood control for downstream property and facilities.

3.3.2. No Action Alternative

Under this Alternative there would be no impacts.

3.4. Fuels and Fire Management

3.4.1. Proposed Action

Vegetation in the project area consists primarily of creosote bush scrub with spacing between shrubs being too high to carry a large fire. There are no noxious weeds or invasive species such as Mediterranean grass or red brome within the inter-shrub spaces to provide fuel loads sufficient to carry a potentially destructive fire.

There was evidence of fire within the project area from the recreating public. During construction there will be a risk of fire due to the use of machinery and equipment that uses fuel in addition to other fuel sources (i.e. trash, rags) for a fire which can be minimized by following fire restrictions.

3.4.2. No Action Alternative

Under this Alternative there would be no impacts.

3.5. Geology/Mineral Resources/Energy Production

3.5.1. Proposed Action

Identification of the environmental properties of soils and geologic hazard constraints with potential to affect the project location were identified using geologic maps, and information available from the Nevada Bureau of Mines and Geology and U.S. Geological Survey (Stewart and Carlson 1978).

The eastern portion of the proposed detention basin project is located within the Las Vegas Valley on Quaternary alluvium. Alluvium is a term for clay, silt, sand, gravel, or similar unconsolidated detrital material, deposited during comparatively recent geologic time by a stream or other body of running water. The alluvium is derived from the foothills of the Spring Mountains which are composed of high peaks and ridges with steep slopes relative to surrounding valleys. Primary landforms within the Spring Mountains include slopes and ridges, rolling uplands, colluvial and alluvian fans, floodplains, ephemeral and perennial streams, riparian areas, and springs (Nachlinger and Reese 1996).

The western portion of the Proposed Action is within late Permian Kaibab, Toroweap, Coconino Formation, red beds. The Kaibab Limestone and Toroweap Formation are a diverse assemblage of sedimentary rock types that average about 250-255 million years old. They are composed primarily of a sandy limestone with a layer of sandstone below, which in some places sandstone and shale also exists as their upper layers. The color of Kaibab Limestone ranges from cream to a grayish-white, while Toroweap is darker ranging from yellow to grey. Coconino Sandstone averages 260 million years old and is composed of pure quartz sand, which is basically petrified sand dunes. Wedge-shaped cross bedding can be seen where traverse-type dunes have been petrified. The color of this layer ranges from white to cream colored. Red beds are also sedimentary rocks, which typically consist of sandstone, siltstone, and shale that are predominantly red in color due to the presence of ferric oxides.

Mineral materials within the project area are public property and administered by the BLM under the regulations at 43 CFR 3600 (Mineral Materials Disposal) and the Federal Aid to Highway Act. Mineral materials are authorized for disposal by the Las

Vegas Resource Management Plan (RMP) and Final Environmental Impact Statement (October, 1998). The regulations at 43 CFR 3600 establish procedures for the exploration, development, and disposal of mineral material resources on the public lands, and for the protection of the resources and the environment. The regulations apply to free use permits and contracts for sale of mineral materials. The sale, free use or issuance of a material site right-of-way for mineral materials must be in conformance with the RMP, Minerals Management Section (Code MN), the Federal Aid to Highway Act and the regulations found at 43 CFR 3600. Any mineral materials extracted, severed or removed from public lands without a contract, free use permit or material site right-of-way constitutes unauthorized use. Unauthorized users are liable for damages to the United States, and are subject to prosecution for such unlawful acts.

3.5.2. No Action Alternative

Under this Alternative there would be no impacts.

3.6. Hydrologic Conditions

3.6.1. Proposed Action

Hydrologic resources include groundwater, surface water, and wetlands. Clark County is within the Colorado River Basin hydrographic region #13. This region covers 12,376 square miles including parts of Clark, Lincoln, Nye, and White Pine counties and is divided into 27 hydrographic areas (State of Nevada Division of Water Resources, 2013). The Las Vegas Valley is located within hydrographic basin #212, one of the 27 hydrographic areas within the Colorado River Basin. According to the Nevada Division of Water Resources, the Proposed Action is within the Las Vegas Valley Groundwater Basin. Groundwater generally flows towards the east and then continues towards the Las Vegas Wash and Lake Mead.

The Proposed Action is not located within any 100 year flood zones. The nearest rain gauge to the project area is the CCRFCD's Upper Flamingo 1, located 3 miles southwest of the Spanish Trails housing community (CCRFD 2014). According to the Upper Flamingo 1 rain gauge annual average precipitation over the last 10 years (2004-present) has been 14 inches and originates in the Spring Mountains to the west. Precipitation generally flows to the East.

There are no permanent surface waters within the Proposed Action. Various dry washes intersect the project location. General hydrology in the area is already disturbed and it is located in the Las Vegas Valley disposal boundary. The proposed project will not impact existing hydrologic conditions. Since no adverse impacts to surface hydrology are expected, rangeland health will also not be negatively affected by the proposed project.

3.6.2. No Action Alternative

Under this Alternative there would be no impacts.

3.7. Invasive Species/Noxious Weeds

3.7.1. Proposed Action

Weeds are species listed under Nevada Revised Statures (NRS) 555.005.201 that have been defined as pests by law or regulation. Noxious weeds are typically plants considered to be detrimental to agriculture, wildlife, or public health that are listed on the State of Nevada Noxious Weed List (Nevada Department of Agriculture, 2006).

During a botanical survey of the project area in March 2014, no noxious weeds or other invasive plant species were observed within the Proposed Action. Although noxious weeds were not present during a survey of the Proposed Action, standard weed Best Management Practices (BMPs) should be implemented during construction and maintenance of the project to prevent their spread into native habitat.

3.7.2. No Action Alternative

Under this Alternative there would be no impacts.

3.8. Lands/Access

3.8.1. Proposed Action

The Proposed Action would occur on BLM administered land. There are two existing right of way (ROW) grants authorized within the Proposed Action (N-60844 and N-60726), but no impacts to either of these facilities will occur. Off-sire access will be via the existing Hualapai Way and Maule Avenue roads authorized by ROW grant N-60726. Access within the detention basin right-of-way area will be by the maintenance and access road from the intersection of Hualapai Way and Maule Avenue to the basin along the inlet channel. The Proposed Action would also require a disposal site within the southwest portion of the ROW or at a BLM approved site. The disposal site is necessary for the maintenance and clean out of the detention basin, no mineral material will be moved off site during construction.

3.8.2. No Action Alternative

Under this Alternative there would be no impacts.

3.9. Migratory Birds

3.9.1. Proposed Action

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et. Seq.) protects migratory birds and their nests (nests with eggs or young). A list of MBTA protected birds can be found in 50 C.F.R. 10.13 (http://www.gpo.gov/fdsys/pkg/CFR-2012-title50-vol1/xml/CFR-2012-title50-vol1-sec10-13.xml) or a complete list is published at the USFWS web site (USFWS 2010 (a)).

According to NDOW, various species of raptors, which use diverse habitat types, may reside in the vicinity of the project area. A few examples include: American kestrel, bald eagle, barn owl, Cooper's hawk, ferruginous hawk, flammulated owl, golden eagle, great horned owl, long-eared owl, northern harrier, red-tailed hawk, rough-legged hawk, sharp-shinned hawk, short-eared owl, turkey vulture, and western screech owl have distribution ranges that include the project area and four-mile buffer area. Furthermore, golden eagle and red-tailed hawk have been directly observed in the vicinity of the project area (NDOW 2014).

Raptor species are protected by State and Federal laws. In addition, bald eagle, burrowing owl, California spotted owl, ferruginous hawk, flammulated owl, golden eagle, northern goshawk, peregrine falcon, prairie falcon, and short-eared owl are NDOW species of special concern and are target species for conservation as outlined by the Nevada Wildlife Action Plan. Per the *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance* (USFWS 2010(b)) NDOW queried their raptor nest database to include raptor nest sites within ten miles of the proposed project area. There are 56 known raptor nest sites within ten miles of the project area (NDOW 2014).

Migratory birds, including the BLM sensitive species, the western burrowing owl (*Athene cunicularia*), and other various raptors may be present during construction of the Proposed Action and experience impacts, especially during the breeding season. The breeding season is when these species are most sensitive to disturbance, and this is generally from February 15th through August 31st for upland desert habitats.

3.9.2. No Action Alternative

Under this Alternative there would be no impacts.

3.10. Recreation

3.10.1. Proposed Action

The Proposed Action is located near the populated community of Summerlin in Clark County, Nevada, near metropolitan Las Vegas. It is an area of high population density residential, commercial, and recreational land use categories. The main land uses in the project area include off-road vehicle recreation, shooting, hiking, and illegal dumping.

Unimproved roads in the project area are used for recreational off-road activities. The recreating public would be permanently displaced from casual recreation within the project area, but the surrounding desert will continue to be utilized for recreational purposes.

The nearest developed recreation opportunities include local urban parks and golf courses or the Red Rock Canyon Conservation Area to the west. The Proposed Action will not impact any proposed developed recreational activities in the area. Some minor casual recreation will be temporarily impacted during construction.

3.10.2. No Action Alternative

Under this Alternative there would be no impacts.

3.11. Socio-Economics

3.11.1. Proposed Action

The region of influence (ROI) for the proposed action is Las Vegas, Clark County, Nevada. Selected socioeconomic indicators for the ROI and comparative data for the state are presented in Table 3.11-1. The project will not disproportionately impact social or economic values.

Table 3.11-1. Selected Socioeconomic Indicators for the Region of Influence and State of Nevada

Geographic Area	Population (2010)	Population (2000)	Labor Force	Housing Units	Owner-Occupied Housing Units (percent)	Housing Vacancy Rate (percent)	Median Home Price
Las Vegas	583,756	478,434	231,388	190,862	59.1	7.3	$137,300
Nevada	2,700,551	1,998,257	1,003,293	827,457	60.9	9.2	$142,000

Source: U.S. Census Bureau 2000, 2014

3.11.2. No Action Alternative

Under this Alternative there would be no impacts.

3.12. Soils

3.12.1. Proposed Action The proposed project area is located in the southwest area of the Las Vegas Valley in Clark County, Nevada. The area was previously surveyed by the USDA Natural Resources Conservation Service. The soil type within the project area consists mainly of cave gravelly fine sandy loam. The area is well drained with a slope ranging from 0 to 4 percent. The soil erosion potential for the entire project area is low. The calcium carbonate has a maximum content of 40 percent and gypsum maximum content is 5 percent.

3.12.2. No Action Alternative

Under this Alternative there would be no impacts.

3.13. Threatened, Endangered or Candidate Animal Species

3.13.1. Proposed Action

Threatened and endangered (T&E) species are placed on a federal list by the U. S. Fish and Wildlife Service (USFWS) and receive protection under the Endangered Species Act of 1973, as amended. The only T&E species known to occur in the project area is the threatened desert tortoise (*Gopherus agassizii*). The proposed action has a may affect, likely to adversely affect determination on the threatened desert tortoise (*Gopherus agassizii*) and a no effect determination for its critical habitat. This project will have no affect on any other federally listed species or designated critical habitat. Section 7 Consultation for this project is covered under the Programmatic Biological Opinion (BO) (File No. 84320-2010-F-0365.R001) contingent on compliance with the terms and conditions. Terms and conditions and minimization measures in the BO contain measures to reduce potential impacts, including take, of desert tortoise.

Historical survey data indicate that the area surrounding the project site is low density tortoise habitat. Desert tortoise survey data collected for the preparation of the Las Vegas Disposal Boundary Environmental Impact Statement (EIS) indicates there are live tortoise and tortoise burrows located within a half mile of the proposed project site. Since tortoises have been found in the vicinity and undisturbed habitat exists in and adjacent to the project site, there is potential for tortoises to wander into the project area. If not noticed and avoided during construction and maintenance activities, desert tortoise could be either injured or killed (by crushing) or harassed (by being moved out of harm's way). The project will disturb a total of 8.0 acres of tortoise habitat.

3.13.2. No Action Alternative

Under this Alternative there would be no impacts.

3.14. Water Resources/Quality (drinking/surface/ground)

3.14.1. Proposed Action

Hydrologic resources include groundwater, surface water, and wetlands. Groundwater quality and the issuance of permits for the use of both groundwater and surface water are overseen by the State Engineer under authority granted by the Nevada Revised Statutes 533 and 534. Wetlands are managed by the US Army Corps of Engineers.

According to the Nevada Division of Water Resources, the Proposed Action is within the Las Vegas Valley Groundwater Basin. Groundwater generally flows towards the east and then continues towards the Las Vegas Wash and Lake Mead. Records from the Nevada Division of Water Resources lists no wells within Section 1 of Township 22S, Range 59E (State of Nevada Division of Water Resources, 2013).

The Las Vegas Valley Water District (LVVWD) manages and treats the Las Vegas Valley's water in accordance with the Safe Drinking Water Act of 1974 to ensure that the drinking water supplied to the public is safe. The Environmental Protection Agency (EPA) sets national drinking water standards that LVVWD must follow. The Las Vegas Valley's drinking water meets or exceeds all federal Safe Drinking Water Act standards (LVVWD 2014).

In the 2013 LVVWD Water Quality Report for 2012, it is indicated that the U.S. EPA requires water agencies to monitor for 91 regulated contaminants with "primary" standards, therefore they must be listed in the report if they are detected in the water supply. The primary standards are set to protect the public against consuming drinking-water contaminants at levels that present human-health risks. In 2012, LVVWD detected 19 contaminants with primary standards and 15 contaminants with "secondary" standards. The secondary standards are established to help water systems manage aesthetic considerations, such as water taste, color and odor. These contaminants, while regulated, are not considered risks to human health.

"Waters of the United States," defined in 33 CFR 328.3(a) to include navigable waters as well as intermittent streams, are not present near the Proposed Action. The project area does not contain hydric soils and habitat in the area does not meet the definition of a wetland. It does not contain: (1) wetlands, wetland fringes or adjacent wetlands, or (2) spawning, feeding, or nesting areas for fish or other important aquatic species. No permanent surface waters or wetlands exist in the project area. Narrow and shallow ephemeral drainages flow from west to east toward the city of Las Vegas. General hydrology in the area is already disturbed since the Proposed Action is located in the Las Vegas Valley Disposal Boundary.

3.14.2. No Action Alternative

Under this Alternative there would be no impacts.

3.15. Woodland/Forestry

3.15.1. Proposed Action

The Proposed Action was identified during internal preliminary scoping as an area known to contain high densities of cactus and yucca. Cacti and yucca are protected by the State of Nevada under Nevada Revised Statute (NRS) 527.260-300. On BLM lands, cacti and yucca are considered government property and are regulated under the BLM Forestry Program. Additionally, the sale and transport of cacti and yucca are regulated by the Nevada Division of Forestry under NRS 527.060-527.120.

During a botanical survey of the Proposed Action, the following cacti occurred as scattered individuals within the project area: *Cylindropuntia echinocarpa* (Silver Cholla), *Cylindropuntia ramosissima* (Diamond Cholla), *Echinocactus polycephala* (Cottontop Cactus), *Echinocereus engelmannia* (Hedgehog Cactus), and *Opuntia basilaris* ssp *basilaris* (Beavertail Cactus). Scattered individual *Yucca schidigera* (Mojave Yucca) plants occurred within the project area.

The Proposed Action will incur new disturbance and temporary disturbance. The scattered individuals of cacti and yucca documented during the survey may be impacted by the proposed action. Cacti and yucca that may be impacted will need to be salvaged and replanted in temporary impact areas or undisturbed portions of the project area in accordance with BLM guidelines.

3.15.2. No Action Alternative

Under this Alternative there would be no impacts.

3.16. Vegetation Excluding Federally Listed Species

3.16.1. Proposed Actions

The Proposed Action was identified as known habitat range of four BLM sensitive plant species. These species were: *Penstemon biocolor* spp. *bicolor* (yellow two toned beardtongue), *Eriogonum corymbosum* (Las Vegas Buckwheat), *Arctomecon californica* (Las Vegas bearpoppy) and *Arctomecon merriamii* (white bearpoppy). Of the four species, yellow two toned beardtongue, was previously documented on the western edge of the project boundary according to the Nevada Natural Heritage Program (NNHP). There were no historical observations of the other three species near the proposed project.

A botanical survey was conducted on March 31, 2014 during the appropriate growing season of the four BLM sensitive species. None of the target plant species were observed. Based on this spring survey, the project area contains potential habitat for

the target species, but does not contain sensitive plant species, and the proposed action is not anticipated to affect any sensitive or rare plant species.

3.16.2. No Action Alternative

Under this Alternative there would be no impacts.

3.17. Visual Resources

3.17.1. Proposed Actions

The proposed action, the construction and maintenance of a flood control detention basin is located in a Class IV Visual Resource Management (VRM) objective area.
The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

3.17.2. No Action Alternative

Under this Alternative there would be no impacts.

4.0. ENVIRONMENTAL EFFECTS

4.1. Geology/Mineral Resources/Energy Production

4.1.1. Proposed Actions

Overall, the impacts to geology from the Proposed Action would be minimal, since construction activity would be limited to surface and near-surface deposits, however the detention basin would result in sub-surface excavation to a depth of approximately 10 feet for a basin with a volume of 42 acre feet and a land area of approximately 9.2 acres. It is possible that the Proposed Action could increase the likelihood of erosion by the clearing of vegetation over soils and excavation of subsurface soils. However, the soils within the basin after excavation will be compacted and stabilized to prevent erosion and the design of the facility is intended to reduce runoff during flood events so no erosion should occur.

The proposed action would produce excess mineral materials. These mineral materials will need to be used within the right-of-way, stockpiled within the right-of-way for future use at this or another location or disposed of in accordance with the regulations found at 43 CFR 3600 or under the Federal Aid to Highways Act in the form of a

contract, free use permit or material site right-of-way before they can be removed from the right-of-way. If mineral materials are to be stockpiled within the right-of-way for future use, they must be obtained in accordance with the regulations found at 43 CFR 3600 or under the Federal Aid to Highways Act in the form of a contract, free use permit or material site right-of-way before they can be removed from the right-of-way.

If a contract, free use permit or material site right-of-way is necessary for the export of excess mineral materials or the import of federally owned mineral materials, the BLM will issue the required contract, free use permit or material site right-of-way so long as it falls within the associated ROW.

There are no active mining claims within the project area, and therefore no claims would be affected. The Proposed Action would not hinder future access to mineral resources. No indirect impacts to the geology and minerals have been identified. Impacts to geological resources in the area are expected to be minimal.

4.1.2. No Action Alternative

Under this Alternative there would be no impacts.

4.2. Migratory Birds

4.2.1. Proposed Actions

Migratory birds could be injured or killed during vegetation removal and grading activities. Adult birds may be able to flee the area; however, during migratory bird nesting season, eggs and juvenile birds that are confined to nests may be killed. Some native plant communities that provide habitat to nesting migratory birds would be eliminated as a result of the proposed project.

The project proponent must comply with the MBTA to avoid potential impacts to protected birds within the Proposed Action. The projects proponent should:

1) Schedule habitat altering projects or portions of projects outside bird breeding season. In upland desert habitats and ephemeral washes containing upland species, the season generally occurs between February 15th through August 31st.

2) If a project that may alter any breeding habitat has to occur during breeding season, a qualified biologist must survey the area for nests prior to commencement of construction activities. The survey will include burrowing and ground nesting species, in addition to those nesting in vegetation. If any active nests (containing eggs or young) are found, an appropriately sized buffer area must be avoided until the young birds fledge. The dates of February 15th through August 31st are a general guideline for breeding season,

however if active nests are observed outside this range they are to be avoided as described above.

4.2.2. No Action Alternative

Under this Alternative there would be no impacts.

4.3. Threatened, Endangered or Candidate Animal Species

4.3.1. Proposed Actions

Tortoises may be injured or killed during construction activities such as soil testing, clearing, grubbing, excavation and grading. Direct habitat loss from vegetation clearing and crushing of burrows in which tortoises dwell may also occur during these activities. The project will disturb a total of 13.3 acres of low density tortoise habitat.

Increased human activity and construction vehicle traffic may also result in tortoise/vehicle collisions that result in tortoise injury or death. Tortoises may take shelter under parked vehicles and be killed, injured, or harassed. Minimization measures such as having an Authorized Biologist onsite during construction activities to conduct clearance surveys for desert tortoise, monitor for desert tortoise during construction, and present a desert tortoise education program would reduce or eliminate these effects.

The biologist would escort vehicles and conduct clearance surveys for all areas of new disturbance, including access that requires overland travel (land survey, soil testing), and any operation/maintenance activity utilizing a grader or any other heavy equipment on the ROW during the active tortoise season (March 1 to October 31) and would be on call during the inactive season. For overland travel, the biologist would walk in front of vehicles while traveling over undisturbed habitat and ensure the same route is to be used for ingress and egress to the site. Additional terms and conditions and minimization measures contained in the Programmatic Biological Opinion (84320-2010-F-0365.R001) can be found in Chapter 7.0. Mitigation.

Indirect effects could be caused by the detention basin include increased predation. Predators such as ravens, coyotes, or other raptors may be attracted to the construction site due to an increase in food opportunities including construction site litter and voluntary feeding from construction staff; or increased water sources due to dust control protocols. An increased presence of predators could lead to a predation increase on smaller, more vulnerable tortoises.

Upon completion of the project, the recreating public will continue to use the area for off road vehicle recreation increasing the chances that new off highway vehicle (OHV) roads and trails will be created. Continued OHV use could result in risk of injury or death to tortoises and/or disturbance to habitat. It is likely the recreating public will also leave trash behind attracting scavengers and predators or the will illegally dump trash and other unwanted items in the desert areas near the project, further degrading

habitat for desert tortoises. These activities could be lessened by limiting access to the recreating public with barriers such as barricades or gates and also placement of signs warning against trespassing and dumping in the area.

Ground disturbing activities during construction may result in an increase of noxious and invasive plant species in the area. Construction machinery may facilitate the spread of existing noxious or invasive species throughout the site, or may facilitate the introduction of new noxious weeds or invasive species. Noxious and invasive plants may displace native species that provide forage for tortoises and also contribute to increased risk for wildlife in the area.

4.3.2. No Action Alternative

Under this Alternative there would be no impacts.

4.4. Vegetation Excluding Federally Listed Species

4.4.1. Proposed Action

No rare or sensitive plants were observed during a survey of the Proposed Action, however habitat is present for the four target sensitive species. Should these species be observed during construction of the proposed project, the BLM Botanist will be contacted for further instruction on minimization and mitigation measures to protect them. Any short term or temporary use areas will need to be restored which will require the development of a restoration plan that must be approved by the BLM Botanist. State protected cacti and yucca within the Proposed Action may be crushed and killed by vehicles and equipment during construction activities or demolished during clearing and grubbing of the site. Avoidance of cacti and yucca during site access and soil testing is possible. However, if cacti and yucca cannot be avoided during construction, all cacti and yucca within permanent and temporary impact areas must be salvaged and replanted in temporary impact areas or undisturbed portions of the project area. Unless otherwise directed by the BLM Botanist, all replanted cacti and yucca must be watered and otherwise maintained for a period of one year. To ensure successful salvage and transplant, all cactus and yucca must be salvaged using a contractor (or other approved by the BLM Botanist) with at least three years' experience salvaging and maintaining plant materials in the Mojave or Sonoran deserts. Any or all plants not to be replanted in the ROW may be taken to the Ann Road stockpile or the BLM office to hold a public salvage sale depending on staff availability. A potential salvage sale must be coordinated with the BLM Botanist.

4.4.2. No Action Alternative

Under this Alternative there would be no impacts.

5.0. CUMULATIVE IMPACTS

Cumulative impacts are the incremental impacts of an action added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time (40 CFR 1508.7). These actions include projects identified within the spatial (geographic) and temporal (timeframe) boundaries of the action considered in this EA. For this project, the spatial limits are bound by a one mile radius of the proposed project. The temporal limits are bound by the anticipated construction timeframe of the detention basin.

5.1. Past and Present Actions

Existing land ownership in the project area is BLM land to the southwest and private land to the west, north and east. There are right-of-way grants for existing utilities and roadways adjacent to the project on public lands and a large R&PP lease for an Open Space County park southeast of the project. There are residential communities that have been developed east of Haulapai Way. As such, the impacts of past and present actions combine to form existing conditions. Existing conditions were considered in the affected environment section of this EA.

5.2 Reasonably Foreseeable Actions

Reasonably foreseeable actions include residential and/or commercial development on private land in the area. There are approximately 365 acres of undeveloped private land within the identified radius of the project. These undeveloped private lands have been in private ownership since 2003 and are zoned for low-density residential. Approximately 140 acres west of Hualapai Way are zoned R-U for minimum 2 acres per residential parcel and about 225 acres east of Hualapai Way are zoned R-E with a maximum of 2 homes per acres. Development of the approximate 450 home sites would result in some traffic impacts and loss of natural habitat. The approximate 420 acres of R&PP land leases to the County that are within the project radius are planned as open space with hiking trails along the mesa tops and ridges. BLM lands of approximately 320 acres within the CI area have not been nominated for sale. Interest in future purchase of those may be limited due to County planning restrictions regarding development on slopes such as those found in the area. No pending land use authorizations have been identified in the CI area.

5.3 Summary of Cumulative Impacts

The environmental impacts of future development within the disposal boundary were analyzed in the Las Vegas Valley Disposal Boundary EIS (BLM, 2004). This development is expected to continue regardless of the proposed project. Relative to the existing development and planned growth for the western Las Vegas Valley, the

incremental cumulative impact of the detention basin site on natural and social resources would be negligible. Mitigation of potential environmental impacts resulting from planned development projects would remain with each project proponent in accordance with applicable federal, state, and local laws, regulations, and ordinances. Mitigation of related impacts of the proposed site for the detention basin is considered in the Environmental Effects section of this EA.

5.3.2 Wildlife

Future development in the valley would continue to displace wildlife, cause mortality of species, and reduce the amount of wildlife habitat. The Las Vegas Valley does not contain the majority of any common wildlife species' population, and therefore, the cumulative loss of 8 acres of habitat for the detention basin site would be negligible in comparison to similar habitat occurring elsewhere. Since these species are common, the cumulative effects are negligible compared to populations of the species throughout the region. These impacts are not expected to result in further decline of the species range wide as all of these actions will be mitigated to minimize the impacts on these species. These effects are also addressed by the terms and conditions for the Programmatic Biological Opinion for BLM activities (File No. 94320-2010-F-0365).

5.3.3. Geology

When added to existing and reasonably foreseeable actions, the cumulative impacts to geology and minerals would be minimal and would include decreased potential for erosion due to soil stabilization.

5.3.4. Migratory Birds

The Proposed Action combined with past, present and future actions will continue to have an impact on Migratory birds. Migratory birds could be injured or killed during vegetation removal and grading activities. Adult birds may be able to flee the area; however, during migratory bird nesting season, eggs and juvenile birds that are confined to nests may be killed. Some native plant communities that provide habitat to nesting migratory birds would be eliminated. These impacts could be minimized by employing a biologist to survey for nests and young prior to ground disturbance during bird breeding season or avoiding ground disturbing activities during the nesting season.

5.3.5 Threatened, Endangered or Candidate Animal Species

The only threatened or endangered species known to occur in the general vicinity of the site is the desert tortoise, a threatened species. This project will have no affect on any other federally listed species or designated critical habitat. Previous consultation under Section 7 of the Endangered Species Act was completed with the U.S. Fish and Wildlife Service which resulted in the issuance of a BO file No.84320-2010-F-0365.R001.

By complying with the terms and conditions of the BO, any past, present, or future actions on federal lands within the cumulative impacts area are expected to have minimal impact.

5.3.7. Vegetation

Past, present, and future actions have the potential to impact vegetation within the cumulative impact area. Past actions for development of residential areas and utilities have disturbed the area surrounding the project. The majority of the disturbance associated with the past, present, and future actions has/will result in the permanent loss of vegetation within the cumulative impacts area. However, with the exception of cacti and yucca, the vegetation is comprised of plants which are common in the Mojave Desert, and are not currently sensitive or specifically protected under Federal, state, or local regulations. All cacti and yucca in the state of Nevada are protected under NRS 527.060-1.20. Therefore, the cumulative impacts associated with the proposed action are expected to be minor.

6.0. LIST OF SPECIALISTS CONSULTED AND PREPARERS

Specialists Consulted
Joseph Varner, BLM, Realty Specialist
Lisa Christianson, BLM, Air Resources Specialist
Mark Slaughter, BLM, Wildlife Biologist
Sendi Kalcic, BLM, Wilderness Specialist
John Evans, BLM, Planning and Environmental Coordinator
Krystal Johnson, BLM, Wild Horse and Burro Specialist
Boris Poff, BLM, Hydrologist
Ben Klink, BLM, Rangeland Management Specialist
Kerri-Anne Thorpe, BLM, Realty Specialist
Lori Dee Dukes, BLM, Geologist
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Fred Edwards, BLM, Botanist
Chris Linehan, BLM, Outdoor Recreation Planner

Preparers
Erlinda “Nikki” Cantarero, Knight and Leavitt Associates, Field Biologist
Crystal Cogar, Knight and Leavitt Associates, Supervising Biologist
John Ellis, Knight and Leavitt Associates, GIS Specialist
Marisa Musso, Knight and Leavitt Associates, Field Biologist

Bruce Lund, Knight and Leavitt Associates, Field Biologist
Merv Boyd, Project Consultant

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APPENDIX A: Response letter from NDOW

BRIAN SANDOVAL
Governor

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February 27, 2014

Crystal Cogar
Supervising Biologist
Knight and Leavitt Associates
4105 Wagon Trail Avenue
Las Vegas, Nevada 89118

Re: Summerlin South Detention Basin

Dear Ms. Cogar:

I am responding to your request for information from the Nevada Department of Wildlife (NDOW) on the known or potential occurrence of wildlife resources in the vicinity of the Summerlin South Detention Basin located in Clark County, Nevada. In order to fulfill your request an analysis was performed using the best available data from the NDOW's wildlife occurrences, raptor nest sites and ranges, greater sage-grouse leks and habitat, and big game distributions databases. No warranty is made by the NDOW as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data. These data should be considered **sensitive** and may contain information regarding the location of sensitive wildlife species or resources. All appropriate measures should be taken to ensure that the use of this data is strictly limited to serve the needs of the project described on your GIS Data Request Form. Abuse of this information has the potential to adversely affect the existing ecological status of Nevada's wildlife resources and could be cause for the denial of future data requests.

To adequately provide wildlife resource information in the vicinity of the proposed project the NDOW delineated an area of interest that included a four-mile buffer around the project area provided by you (email, February 18, 2014). Wildlife resource data was queried from the NDOW databases based on this area of interest. The results of this analysis are summarized below.

Big Game – There are no known occupied big game distributions in the vicinity of the proposed project area.

Greater Sage-Grouse – There is no known greater sage-grouse habitat in the vicinity of the project area.

Raptors – Various species of raptors, which use diverse habitat types, may reside in the vicinity of the project area. American kestrel, bald eagle, barn owl, burrowing owl, Cooper's hawk, ferruginous hawk, flammulated owl, golden eagle, great horned owl, long-eared owl, merlin, northern goshawk, northern harrier, northern saw-whet owl, osprey, peregrine falcon, red-tailed hawk, rough-legged hawk, sharp-shinned hawk, short-eared owl, turkey vulture, and western screech owl have distribution ranges that include the project area and four-mile buffer area. Furthermore, golden eagle and red-tailed hawk have been directly observed in the vicinity of the project area.

Raptor species are protected by State and Federal laws. In addition, bald eagle, burrowing owl, California spotted owl, ferruginous hawk, flammulated owl, golden eagle, northern goshawk, peregrine falcon, prairie falcon, and short-eared owl are NDOW species of special concern and are target species for conservation as outlined by the Nevada Wildlife Action Plan. Per the *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance* (United States Fish and Wildlife Service 2010) we have queried our raptor nest database to include raptor nest sites within ten miles of the proposed project area. There are

56 known raptor nest sites within ten miles of the project area. Please refer to Appendix A for further information regarding these nest sites.

Other Wildlife Resources

There have been 50 additional species observed in the vicinity of the project area. Please refer to Appendix B for a list of these species.

The above information is based on data stored at our Reno Headquarters Office, and does not necessarily incorporate the most up to date wildlife resource information collected in the field. Please contact the Habitat Division Supervising Biologist at our Southern Region Las Vegas Office (702.486.5127) to discuss the current environmental conditions for your project area and the interpretation of our analysis. Furthermore, it should be noted that the information detailed above is preliminary in nature and not necessarily an identification of every wildlife resource concern associated with the proposed project. Consultation with the Supervising Habitat biologist will facilitate the development of appropriate survey protocols and avoidance or mitigation measures that may be required to address potential impacts to wildlife resources.

Brad Hardenbrook - Southern Region Supervising Habitat Biologist (ext. 3600)

Federally listed Threatened and Endangered species are also under the jurisdiction of the United States Fish and Wildlife Service. Please contact them for more information regarding these species.

If you have any questions regarding the results or methodology of this analysis please do not hesitate to contact our GIS office at (775) 688-1565.

Sincerely,

Bonnie Weller

Bonnie Weller
GIS Specialist/Biologist III

Appendix A: Raptor Nests

Probable Use	Last Check	Last Active	Township/Range/Section
Accipiter/Buteo	6/26/1993		21 0220S 0580E 003
Accipiter/Buteo	1/1/1998		21 0220S 0590E 007
Accipiter/Buteo	7/18/1981	7/18/1981	21 0220S 0590E 007
Accipiter/Buteo	6/26/1993	6/26/1993	21 0220S 0580E 003
Burrowing Owl	5/22/1997	5/22/1997	21 0220S 0610E 021
Buteo	6/26/1993		21 0220S 0590E 012
Buteo	7/10/1993		21 0210S 0580E 013
Buteo	1/1/1987	1/1/1987	21 0230S 0580E 002
Buteo	1/1/1991	1/1/1991	21 0210S 0590E 036
Buteo	6/27/1993	6/27/1993	21 0220S 0590E 017
Buteo	7/3/1993	7/3/1993	21 0200S 0590E 031
Buteo	5/3/2011	5/3/2011	21 0230S 0600E 007
Buteo/Corvid	5/3/2011		21 0230S 0590E 024
Buteo/Corvid	5/3/2011		21 0210S 0590E 028
Buteo/Corvid	5/3/2011		21 0230S 0590E 024
Buteo/Corvid	5/3/2011		21 0230S 0590E 024
Buteo/Corvid	5/3/2011		21 0230S 0590E 024
Buteo/Corvid	5/3/2011		21 0220S 0590E 017
Buteo/Corvid	5/3/2011		21 0220S 0590E 008
Buteo/Corvid	5/3/2011		21 0230S 0590E 024
Buteo/Corvid	5/3/2011	5/3/2011	21 0210S 0590E 033
Eagle	7/25/1993		21 0220S 0580E 022
Eagle	5/12/2009		21 0230S 0600E 007
Eagle	5/3/2011		21 0230S 0580E 012
Eagle	5/3/2011		21 0230S 0590E 006
Eagle	5/3/2011		21 0230S 0600E 007
Eagle	5/3/2011		21 0230S 0600E 007
Eagle	5/3/2011		21 0230S 0600E 006
Eagle	5/3/2011		21 0220S 0590E 005
Eagle	5/3/2011		21 0230S 0600E 007
Eagle	5/3/2011		21 0230S 0600E 007
Eagle	5/3/2011	5/22/1993	21 0230S 0600E 007
Eagle/Buteo	5/3/2011		21 0230S 0600E 007
Eagle/Buteo	5/3/2011		21 0230S 0590E 020
Eagle/Buteo	5/3/2011		21 0210S 0590E 028
Eagle/Buteo	5/3/2011		21 0230S 0580E 012
Eagle/Buteo	5/3/2011		21 0230S 0600E 007
Falcon	1/1/1977		21 0210S 0590E 012
Falcon	5/23/1982	5/23/1982	21 0230S 0590E 013
Falcon	4/1/1993	1/1/1990	21 0220S 0590E 001
Falcon	5/22/1993	5/22/1993	21 0230S 0600E 006
Falcon	6/26/1993	6/26/1993	21 0220S 0580E 003
Falcon	7/4/2012	7/4/2012	21 0230S 0600E 007
Falcon	7/6/2012	7/6/2012	21 0220S 0590E 008
Falcon	7/7/2012	7/7/2012	21 0200S 0580E 036
Owl	6/26/1993	6/26/1993	21 0220S 0580E 003
Unknown	5/7/2004		21 0220S 0590E 001
Unknown	5/7/2004		21 0230S 0600E 007

Unknown	5/7/2008	21 0220S 0580E 028
Unknown	5/12/2009	21 0230S 0600E 006
Unknown	5/12/2009	21 0230S 0580E 013
Unknown	5/12/2009	21 0230S 0590E 024
Unknown	5/12/2009	21 0230S 0600E 007
Unknown	5/12/2009	21 0230S 0590E 013
Unknown	5/12/2009	21 0230S 0590E 024
Unknown	5/12/2009	21 0230S 0590E 024

Appendix B: Other Wildlife Occurrences

Common Name	ESA	State	SWAP_SoCP
big brown bat			
black-throated gray warbler			
bushtit			
California kingsnake			
California myotis			
canyon bat			
chipping sparrow			
common chuckwalla			Yes
common side-blotched lizard			
desert banded gecko			Yes
desert horned lizard			Yes
desert night lizard			Yes
desert pocket mouse			Yes
desert tortoise	Threatened	Threatened	Yes
flycatcher (unknown)			
glossy snake			
golden-crowned kinglet			
gophersnake			
gray flycatcher			
gray vireo			
Great Basin collared lizard			Yes
Great Basin fence lizard			
Great Basin gophersnake			
juniper titmouse			
kit fox			
lesser goldfinch			
Lincoln's sparrow			
long-nosed leopard lizard			Yes
Mojave Desert sidewinder			Yes
Mojave rattlesnake			
Nevada side-blotched lizard			
northern desert iguana			Yes
northern desert nightsnake			
northern sagebrush lizard			
northern zebra-tailed lizard			
Oregon junco			
phainopepla			
plumbeous vireo			
ruby-crowned kinglet			
spotted towhee			
Townsend's solitaire			
Townsend's warbler			
Virginia's warbler			Yes
warbling vireo			
western banded gecko			Yes
western scrub-jay			
white-breasted nuthatch			
Wilson's warbler			

yellow-backed spiny lizard
zebra-tailed lizard

ESA: Endangered Species Act Status
State: State of Nevada Special Status
SWAP_SoCP: Nevada State Wildlife Action Plan (2012) Species of Conservation Priority